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NEW ENTOCYTHERID OSTRACODS FROM TENNESSEE WITH A KEY TO THE SPECIES OF THE GENUS *ASCETOCYTHERE*

By Horton H. Hobbs, Jr., and Margaret Walton
Smithsonian Institution, Washington, D.C. 20560 and Mountain Lake Biological Station, Pembroke, Virginia 24136

During a survey of the crayfishes of Tennessee, Raymond W. Bouchard (at present Postdoctoral Fellow, Smithsonian Institution) saved the sediments from the containers that he was using to preserve the specimens caught, and these were donated to us. From these sediments, the branchiobdellids (now in the collection of Perry C. Holt, Virginia Polytechnic Institute and State University), entocytherids, and copepods were retrieved, and the descriptions of new entocytherids included here are largely based on specimens obtained by Dr. Bouchard. Additional material was contributed by Dr. Holt.

Included among the descriptions herein are four new members of the genus *Ascetocythere* (together with a key to the 15 members of the genus), two species of the genus *Dactylocythere*, and one species assigned to a new genus, *Psittocythere*.

We are most grateful to Drs. Bouchard and Holt for donating these specimens to us, and we wish to thank Fenner A. Chace, Jr., Margaret A. Daniel, and C. W. Hart, Jr., for their criticisms of the manuscript.

Ascetocythere Hart, 1962

In order to encompass the new species, *Ascetocythere veruta*, the diagnosis of the genus offered by Hobbs and Hobbs (1970:3) must be emended as follows (The altered portion is in italics.): "Terminal tooth of mandible pectinate. Male copulatory complex without finger guard; peniferum extending ventrally much beyond clasping apparatus, elongate, comparatively slender, with subterminal bulbous enlargement bearing one to several projections; *penis with gap between dorsal spermatic and*

ventral prostatic elements along part of its length except in A. veruta, and distal portion directed anteriorly, anteroventrally, or posteroventrally; both elements always shorter than clasping apparatus; accessory groove lacking. Clasping apparatus well developed and may or may not be clearly divisible into vertical and horizontal rami; external border of horizontal ramus entire, internal border with 2, 3, or no teeth along apical half, if present, often grouped far distally with 3 apical denticles. Triunguis female lacking pectinate process on distal podomere of second antenna; genital complex consisting of genital papilla but lacking J-shaped rod and amiculum."

KEY TO THE SPECIES OF THE GENUS *ASCETOCYTHERE*
(Modified from Hobbs and Hobbs, 1970:3)

1	Penis with contiguous spermatic and prostatic elements ..... *A. veruta*, new species
1′	Penis with gap between spermatic and prostatic elements along part of its length 2
2(1′)	Preaxial (internal) border of distal half of clasping apparatus with one or more teeth situated proximal to apical denticles, or preaxial border unarmed (Asceta Group) 3
2′	Preaxial (internal) border of clasping apparatus with teeth and apical denticles grouped distally (Coryphodes Group) 14
3(2)	Bulbous portion of peniferum with well-developed anterior process 4
3′	Bulbous portion of peniferum lacking anterior process 12
4(3)	Ventral portion of peniferum with angular flange 5
4′	Ventral portion of peniferum lacking angular flange 7
5(4)	Flange on ventral portion of peniferum subtriangular ..... *A. bouchardi*, new species
5′	Flange on ventral portion of peniferum subrectangular 6
6(5′)	Ventral extremity of peniferum with fingerlike projection extending ventrally beyond angular flange ..... *A. asceta* (Hobbs and Walton, 1962:39)
6′	Ventral extremity of peniferum lacking fingerlike projection ..... *A. ozalea* Hobbs and Hart, 1966:40
7(4′)	Ventral portion of peniferum with posterior process 8
7′	Ventral portion of peniferum lacking posterior process 10
8(7)	Anterior process triangular, broadly fused basally with ventral process ..... *A. triangulata*, new species
8′	Anterior process slender and elongate, distinctly set off from digitiform ventral process 9
9(8′)	Anterior process of peniferum much shorter than ventral (digitiform) process and situated on level above base of penis ..... *A. sclera* Hobbs and Hart, 1966:42
9′	Anterior process of peniferum as long as ventral (digitiform) process and situated on level below base of penis ..... *A. holti* Hobbs and Walton, 1970:853

10(7′) Peniferum with tablike penis guide extending anterodorsally from mesial side of ventral process ---------- *A. pseudolita*, new species

10′ Peniferum lacking tablike penis guide ---------- 11

11(10′) Postaxial (external) border of clasping apparatus with proximal bend at end of proximal fifth of apparatus; penis reaching posterior surface of digitiform process ---------- *A. lita* Hobbs and Hobbs, 1970:4

11′ Postaxial (external) border of clasping appartus with proximal bend at end of proximal third of apparatus; penis extending along anterior side of digitiform process ---------- *A. batchi* Hobbs and Walton, 1968:237

12(3′) Ventral portion of peniferum lacking angular flange ---------- *A. didactylata* Hobbs and Hart, 1966:43

12′ Ventral portion of peniferum with angular flange ---------- 13

13(12′) Ventral portion of peniferum with distinct curved digitiform (ventral) process extending posteroventrally from flange ---------- *A. hoffmani* Hobbs and Hart, 1966:40

13′ Ventral portion of peniferum lacking distinct digitiform (ventral) process ---------- *A. hyperoche* Hobbs and Hart, 1966:41

14(2′) Anterior surface of subterminal or terminal enlargement of peniferum with anteroventrally projecting, clublike prominence and two additional prominences ---------- *A. cosmeta* Hobbs and Hart, 1966:46

14′ Anterior surface of terminal enlargement of peniferum with single prominent snoutlike projection ---------- 15

15(14′) Snoutlike prominence less than half as long as longitudinal diameter of peniferum at level of prominence ---------- *A. myxoides* Hobbs and Hart, 1966:45

15′ Snoutlike prominence more than two-thirds as long as longitudinal diameter of peniferum at level of prominence ---------- *A. coryphodes* Hobbs and Hart, 1966:44

Ascetocythere bouchardi, new species
(Figure 1*a–d*)

Male: Eye pigmented (not clearly defined in holotype) and located approximately one-fourth shell length from anterior margin. Shell (Fig. 1*b*) ovate with greatest height one-third length from posterior end where about 1.3 times height at level of eye; margin entire but with slight broad impression ventrally just posterior to level of eye. Submarginal setae present except dorsally, somewhat evenly spaced ventrally but closer together anterodorsally and posteroventrally.

Copulatory complex (Fig. 1*a*) with bulbous portion of peniferum bearing following processes: anterior process short (length about one-sixth diameter of peniferum at base), thick, rounded distally, and directed anteriorly; ventral process very complex, consisting of broad winglike

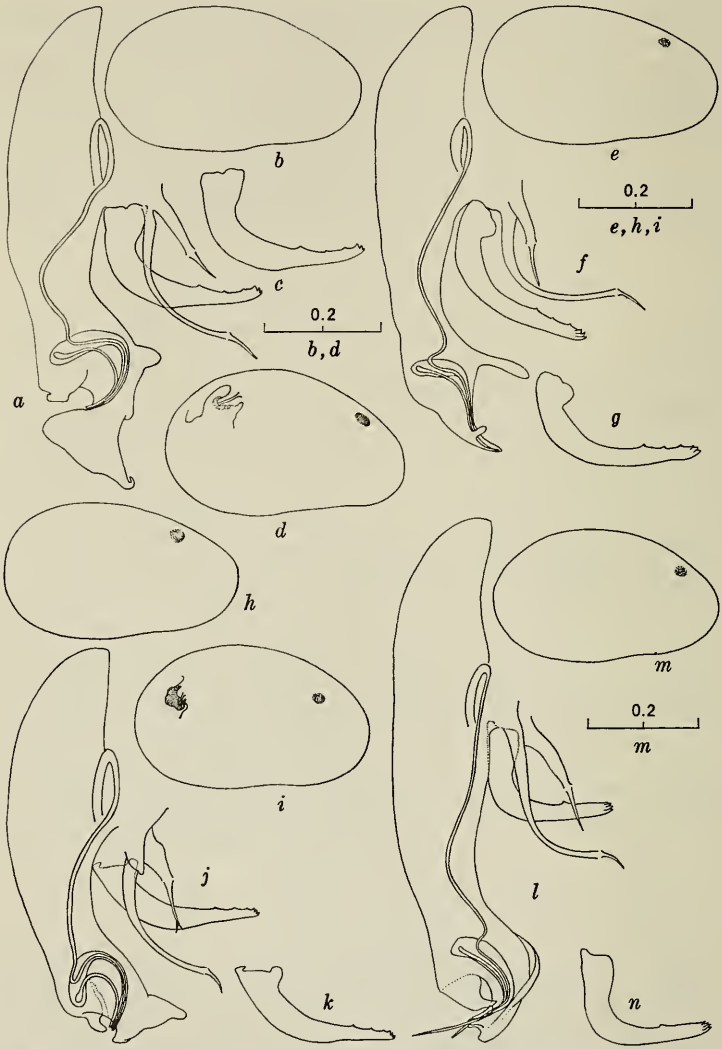

FIG. 1*a–d*, *Ascetocythere bouchardi*, new species; 1*e–g*, *Ascetocythere pseudolita*, new species; 1*h–k*, *Ascetocythere triangulata*, new species; 1*l–n*, *Ascetocythere veruta*, new species. *a*, *f*, *j*, *l*, coplatory complex of male; *b*, *e*, *h*, *m*, dextral view of shell of male; *c*, *g*, *k*, *n*, clasping apparatus of male; *d*, *i*, dextral view of shell of triunguis female. Scales in mm.

lobe supporting terminal anteroventral digitiform, ventromesially directed projection and small flange projecting anteromesially from cephalic base of process; and posterior process consisting of short subrectangular lobe on posteroventral angle of bulbous area. Penis very prominent, C-shaped, with apex reaching posterodorsal base of flange of ventral process. Clasping apparatus (Fig. 1*c*) not reaching level of midlength of bulge of peniferum, L-shaped, with margins of very short, broad, tapering vertical ramus entire; horizontal ramus with almost uniform diameter along proximal third, tapering in middle third, and with subparallel dorsal and ventral margins in distal third; internal border of distal half with 3 equally spaced teeth, and apex with 3 terminal denticles. Dorsal finger moderately heavy and about one-half as long as slender ventral finger; latter slender and evenly curved posteroventrally almost from base.

Triunguis Female: Eye pigmented and situated approximately one-fifth shell length from anterior margin. Shell (Fig. 1*d*) subpyriform, highest slightly posterior to midlength, greatest height approximately 1.5 times height at level of eye. Submarginal setae disposed as in male. Genital complex consisting of short posteroventrally directed papilla with heterogeneous mass adhering to apical part.

Measurements (*in mm*): 5 males and 5 females.

	Holotype	Males	Allotype	Females
Length (range)	0.43	0.43–0.46	0.42	0.42–0.47
Average		0.44		0.44
Height (range)	0.25	0.25–0.27	0.27	0.25–0.28
Average		0.26		0.26

Type-locality: Soddy Creek off County Road 5306, southwest of Hendon, approximately 0.3 mile north of the Sequatchie County line, Bledsoe County, Tennessee, where it was infesting the stream-dwelling *Cambarus* (*Jugicambarus*) *parvoculus* Hobbs and Shoup, 1947, and *Cambarus* (*Jugicambarus*) sp. nov.

Disposition of Types: The holotypic male and allotypic female are deposited in the National Museum of Natural History (Smithsonian Institution), numbers 150640 and 150641, respectively. Paratypes are in the collection of H. H. Hobbs III and the Smithsonian Institution.

Range and Specimens Examined: Tweny-two specimens from the following localities in Tennessee: Type-locality; Renfro Creek at U.S. Highway 70, northwest of Ozone, Cumberland County; Duskin Creek at County Road 5881, northeast of Milo, Bledsoe County; and Cain Creek, tributary of North Chickamauga Creek, off road between County Road 4264 and U.S. Highway 27, southeast of Dunlap, Sequatchie County.

Hosts: *Cambarus* (*Jugicambarus*) *parvoculus* Hobbs and Shoup, 1947, *Cambarus* (*Hiaticambarus*) *longirostris* Faxon, 1885, and *Cambarus* (*Jugicambarus*) sp. nov.

Entocytherid Associates: *Dactylocythere pachysphyrata* Hobbs and Walton, 1966, *Donnaldsoncythere hiwasseensis* (Hobbs and Walton, 1961).

Relationships: *Ascetocythere bouchardi* has its closest affinities with *Ascetocythere asceta* (Hobbs and Walton, 1962) and, more distantly, is related to *A. hoffmani* Hobbs and Hart, 1966, and *A. ozalea* Hobbs and Hart, 1966. The flattened flange on the ventral end of the peniferum, the caudally curved penis, and 3 teeth on the preaxial border of the horizontal ramus of the clasping apparatus will distinguish *A. bouchardi* from all of its congeners.

Etymology: This ostracod is named in honor of its discoverer, Raymond W. Bouchard, who also collected and donated to us most of the specimens on which this report is based.

Ascetocythere pseudolita, new species

(Figure 1*e–g*)

Male: Eye pigmented and located one-fourth shell length from anterior margin. Shell (Fig. 1*e*) egg-shaped, with greatest height slightly posterior to midlength and 1.4 times height at level of eye. Margin entire but with faint broad ventral excavation short distance anterior to midlength. Submarginal setae present except posterodorsally; setae slightly closer together anteriorly and posteriorly than ventrally.

Copulatory complex (Fig. 1*f*) with usual ventral bulbous area bearing anteriorly directed, slender, slightly curved anterior process; ventral surface of bulbous area produced in conical, gently procurved ventral process bearing tablike penis guide mesially. Penis also curved and following contour of mesial longitudinal groove almost to apex of process. Clasping apparatus (Fig. 1*g*) not nearly reaching ventral margin of peniferum, not clearly divisible into horizontal and vertical rami but with subangular bend proximally and gently tapering distally; preaxial margin bearing 1 small tooth at base of distal third and 2 additional ones evenly spaced between it and 3 apical denticles. Dorsal finger slightly less than half as long as gently curved ventral finger, latter with bend similar although not subparallel to contour of clasping apparatus.

Female: Unknown.

Measurements: Holotypic male (only known specimen) 0.41 mm long and 0.24 mm high.

Type-locality: Laurel Branch off U.S. Highway 25W, northwest of La Follette, Campbell County, Tennessee, where it was found in company with *Donnaldsoncythere hiwasseensis* (Hobbs and Walton, 1961) and *Dactylocythere spinata* Hobbs and Walton, 1970. These were retrieved from a collection of crayfishes containing *Cambarus* (*Jugicambarus*) *distans* Rhoades, 1944, and *Cambarus* (*Puncticambarus*) *buntingi* Bouchard, 1973.

Disposition of Types: The holotypic male is deposited in the National Museum of Natural History (Smithsonian Institution), number 150642.

Range and Specimens Examined: The holotype is the only known specimen.

Hosts and Entocytherid Associates: See "Type-locality."

Relationships: *Ascetocythere pseudolita*, as its name suggests, shares more in common with *Ascetocythere lita* Hobbs and Hobbs, 1970, than with any other species. The most striking similarities exist in the terminal elements of the peniferum and the armature of the clasping apparatus. The most conspicuous differences are in the curvature of the clasping apparatus which approaches that of *A. asceta* (Hobbs and Walton, 1962) and in the presence of the tablike penis guide directing the penis toward the distal extremity of the ventral process rather than posteroventrally.

Ascetocythere triangulata, new species
(Figure 1*h–k*)

Male: Eye pigmented and located about one-fourth shell length from anterior margin. Shell (Fig. 1*h*) subovate with greatest height about one-third shell length from posterior margin, there about 1.3 times height at level of eye; ventral margin with shallow excavation anterior to mid-length. Submarginal setae present except dorsally; setae somewhat closer together anteriorly and posteriorly than ventrally.

Copulatory complex (Fig. 1*j*) with ventral subbulbous area bearing prominent broadly based subtriangular cephalic process (whence the specific name), posteroventral margin of which poorly delimited from greatly reduced, slightly recurved ventral process; posterior process small, thumblike, procurved, and opposing posterior margin of ventral process. Penis U-shaped and emerging from body of peniferum between ventral and posterior processes. Clasping apparatus (Fig. 1*k*) not nearly reaching ventral extremity of peniferum and not divisible into horizontal and vertical rami; apparatus curved in proximal half, almost straight in distal half, and gently tapering almost from base to 3 terminal denticles; preaxial margin bearing 3 teeth on distal third, with penultimate tooth closer to ultimate than to antepenultimate. Dorsal finger stouter than ventral and approximately half as long; ventral finger gently curved caudoventrally from base.

Triunguis Female: Eyes situated as in male. Shell (Fig. 1*i*) more highly vaulted than in male but with greatest height also about 1.3 times that at level of eye; concavity on ventral margin more strongly pronounced than in male. Submarginal setae disposed as in male.

Genital complex consisting of single or bilobed prominence surrounded by heterogeneous, amorphous, slightly refractile mass situated posterodorsally.

Measurements (*in mm*): 2 males and 2 females.

	Holotype	Male	Allotype	Female
Length	0.41	0.42	0.41	0.41
Height	0.22	0.23	0.25	0.25

Type-locality: Pole Bridge Branch (Caney Fork River System), tributary to Lost Creek at County Road 4385, south of De Rossett, White County, Tennessee. There it was associated with *Donnaldsoncythere hiwasseensis* (Hobbs and Walton, 1961), *Dactylocythere* sp., and *Entocythere illinoisensis* Hoff, 1942. These ostracods were obtained from a collection of crayfishes containing *Cambarus* (*Depressicambarus*) *sphenoides* Hobbs, 1968, and *C.* (*Jugicambarus*) *parvoculus* Hobbs and Shoup, 1947.

Disposition of Types: The holotypic male and allotypic female are deposited in the National Museum of Natural History (Smithsonian Institution), number 150643 and 150644, respectively, as are the paratypic male and female.

Range and Specimens Examined: Known only from the type-locality. The four specimens in the type-series are the only known specimens.

Hosts and Entocytherid Associates: See "Type-locality."

Relationships: *Ascetocythere triangulata* has its closest affinities with members of the Asceta Group of the genus, and shares more in common with *A. holti* Hobbs and Walton, 1970, than with any other species. It may be distinguished from all members of the genus by the anterior process of the peniferum which is subtriangular with its broad base situated on the anterodistal margin of the peniferum. Three teeth on the preaxial border of the clasping apparatus will also distinguish this species from *A. holti.*

Ascetocythere veruta, new species
(Figure 1*l–n*)

Male: Eye pigmented and located slightly anterior to anterior fourth of shell length from anterior margin. Shell (Fig. 1*m*) almost egg-shaped with greatest height short distance posterior to midlength where about 1.4 times higher than shell at level of eye; ventral margin with shallow concavity anterior to midlength. Submarginal setae present except dorsally and posterodorsally; setae only little closer together anterodorsally and posteroventrally than elsewhere.

Copulatory complex (Fig. 1*l*) with ventral subbulbous area lacking cephalic process but bearing thin shelflike obliquely vertical flange on cephalic margin, ventral part extending onto prominent posteroventrally curved ventral process; latter bifid distally with more posterodistal lobe supporting penis; posterior process consisting of short, strongly sclerotized, clawlike projection situated posterodorsal to ventral process and with apex directed anteriorly. Penis unique in genus, its prostatic and spermatic elements being contiguous rather than separated for some distance; both elements emerging free from distal extremity of posterior lobe of bifid ventral process. Clasping apparatus (Fig. 1*n*) L-shaped with horizontal ramus noticeably slenderer (slightly tapering) than vertical ramus and bearing single tooth on preaxial surface slightly distal

to midlength; ramus terminating in 4 apical denticles. Both dorsal and ventral fingers rather slender, former little more than half length of latter; ventral finger straight along proximal third and gently curved caudally to base of apical seta.

Female: Unknown.

Measurements: Holotypic male (only known specimen) 0.41 mm long and 0.24 mm high.

Type-locality: Poplar Creek (Tennessee River System) on road between Tennessee routes 115 and 61, in Laurel Grove, Anderson County, Tennessee, where it was found associated with *Dactylocythere falcata* (Hobbs and Walton, 1961), and *Donnaldsoncythere hiwasseensis* (Hobbs and Walton, 1961). It was infesting either *Cambarus* (*Hiaticambarus*) *longirostris* Faxon, 1885, or *C.* (*Jugicambarus*) *distans* Rhoades, 1944.

Disposition of Type: The holotypic male is deposited in the National Museum of Natural History (Smithsonian Institution), number 150645.

Range and Specimens Examined: Known only from the type-locality; the holotype is the only specimen available.

Host and Entocytherid Associates: See "Type-locality."

Relationships: *Ascetocythere veruta* is not closely allied to any known entocytherine. The general conformation of the peniferum resembles that of members of the Asceta Group of the genus more closely than those of other members of the subfamily, and the clasping apparatus is strikingly similar to that of *Ascetocythere lita* Hobbs and Hobbs, 1970, but differs in that only 1 tooth is present on the preaxial margin. The contiguous condition of the spermatic and prostatic elements of the penis, as stated above, is unique in the genus, as are the posteroventrally directed ventral process and the heavily sclerotized clawlike posterior process. The latter is suggestive of the posteroventral, sometimes movable, clawlike projection in the Microsyssitrinae and some Notocytherinae. (See Hart, Nair, and Hart, 1967, and Hart and Hart, 1967.)

Dactylocythere Hart, 1962

The two new members of the genus *Dactylocythere* described below may be included in the key to the members of that genus provided by Hobbs and Hobbs (1970:6) by inserting the following:

12(7′)	Dorsal margin of accessory groove not reaching beyond midlength of spermatic loop	13a
12′	Dorsal margin of accessory groove reaching almost to, or slightly beyond, dorsal extremity of spermatic loop	16
13a(12)	Preaxial (internal) border of horizontal ramus of clasping apparatus with 2 or more teeth or emarginations; tip of penis not nearly reaching level of posteroventral extremity of peniferum	13
13a′	Preaxial (internal) border of horizontal ramus of clasping apparatus never with more than 1 (sometimes without)	

tooth and it adjacent to apical denticles; tip of penis reaching level of posteroventral extremity of peniferum 30

30(13a') Ventral surface of peniferum almost straight; peniferal groove conspicuous; anteroventral protuberance of peniferum lacking ---------- *Dt. scissura*, new species

30' Ventral surface of peniferum curved; peniferal groove lacking; peniferum bearing anterovental, slightly tapering, truncate protuberance ---------- *Dt. crena*, new species

Dactylocythere crena, new species
(Figure 2*a–f*)

Male: Eye pigmented, located approximately one-third to one-fourth shell length from anterior margin. Shell (Fig. 2*d*) oblong ovate, produced posteroventrally in broad rounded lobe. Submarginal setae around entire perimeter, somewhat evenly dispersed except anterodorsally and posteroventrally where closer together. Sternal spine lacking.

Copulatory complex (Fig. 2*a*) with rather short, somewhat tapering, distally bifid finger guard; peniferum robust with small, rounded posteroventral lobe bearing delicate anteroventral and somewhat mesial sheath-like protuberance, latter broader at base than distally; peniferal groove not evident. Penis L-shaped with distal arm subequal in length to proximal arm, conspicuously longer than that of all other congeners except *Dactylothere scissura* (see below), and extending well into anteroventral protuberance of peniferum. Accessory groove slender, extending posterodorsally from base of penis, variable in length but rarely reaching level of ventral extremity of spermatic loop. Clasping apparatus (Fig. 2*c*) extending ventrally beyond ventral extremity of peniferum, somewhat L-shaped with rami joined in rather abrupt curve; vertical ramus almost straight with both pre- and postaxial margins entire; horizontal ramus subequal in length to vertical ramus, very gently curved dorsally from base to apex, its margins entire, and terminating in 3 or 4 small denticles. Dorsal and ventral fingers slender, latter about twice length of former and with proximal third to half straight, distal portion curved gently caudally.

Triunguis Female: Eye pigmented, situated slightly posterior to anterior fourth of shell. Shell (Fig. 2*e*) tapering anteriorly, 1.5 times as high posteriorly as at level of eye. Posterior margin of shell with conspicuous, often subrectangular, notch (from whence the name *crena*, L. = notch) height of which approximately one-fourth to one-fifth greatest height of shell. Genital complex (Fig. 2*b*) situated at fundus of notch consisting of vertically disposed sinus encompassing slightly curved hyalin rod (probably corresponding to "J-shaped rod" of most congeners) in dorsal half and tubular cavity with posteroventral angle ventrally. No trace of amiculum present.

Measurements (in mm): 10 males and 10 females.

	Holotype	Males	Allotype	Females
Length (range)	0.68	0.61–0.69	0.69	0.61–0.70
Average		0.67		0.65
Height (range)	0.35	0.33–0.37	0.34	0.34–0.42
Average		0.35		0.39

Type-locality: Field off County Road 2428, (Tennessee River Basin), southeast of Martel near Cedar Hills Golf Course, Loudon County, Tennessee, where this ostracod was infesting an undescribed burrowing crayfish, *Cambarus* (*Depressicambarus*) sp.

Disposition of Types: The holotypic male and allotypic female are deposited in the National Museum of Natural History (Smithsonian Institution), number 150646 and 150647. Paratypes are in the collection of H. H. Hobbs III and the Smithsonian Institution.

Range and Specimens Examined: Approximately 175 specimens from the type-locality and immediate vicinity (Tennessee River Basin).

Hosts: *Cambarus* (*Lacunicambarus*) *diogenes* subsp. and *Cambarus* (*Depressicambarus*) sp.

Entocytherid Associates: *Uncinocythere simondsi* Hobbs and Walton, 1960, *Cymocythere gonia* Hobbs and Hart, 1966, and *Dactylocythere* sp.

Relationships: *Dactylocythere crena* has its closest affinities with *Dt. scissura* (described below). They share a longer ventral arm of the penis than other species of the genus, and the females of both possess a deep notch in the caudal margin of the shell. This species may be distinguished from *Dt. scissura* by its larger size, in possessing a rounded, as opposed to almost straight, anteroventral margin of the peniferum, and the penis opens into an anteroventral sheathlike projection from the lobe.

Dactylocythere scissura, new species
(Figure 2*g–k*)

Male: Eye pigmented, located slightly posterior to anterior fifth of shell. Shell (Fig. 2*g*) oblong ovate with slight broadly rounded posteroventral bulge. Submarginal setae around entire perimeter of shell, somewhat evenly distributed except anterodorsally and posteroventrally where closer together. Sternal spine absent.

Copulatory complex (Fig. 2*i*) with short to moderately long trifid finger guard; peniferum moderately robust with posteroventral extremity subangular and with almost straight ventral margin forming, in optical section, acute anteroventral angle. Peniferal groove distinct, opening anteroventrally, its diameter about half that of least diameter of vertical ramus of clasping apparatus. Penis L-shaped with distal arm distinctly

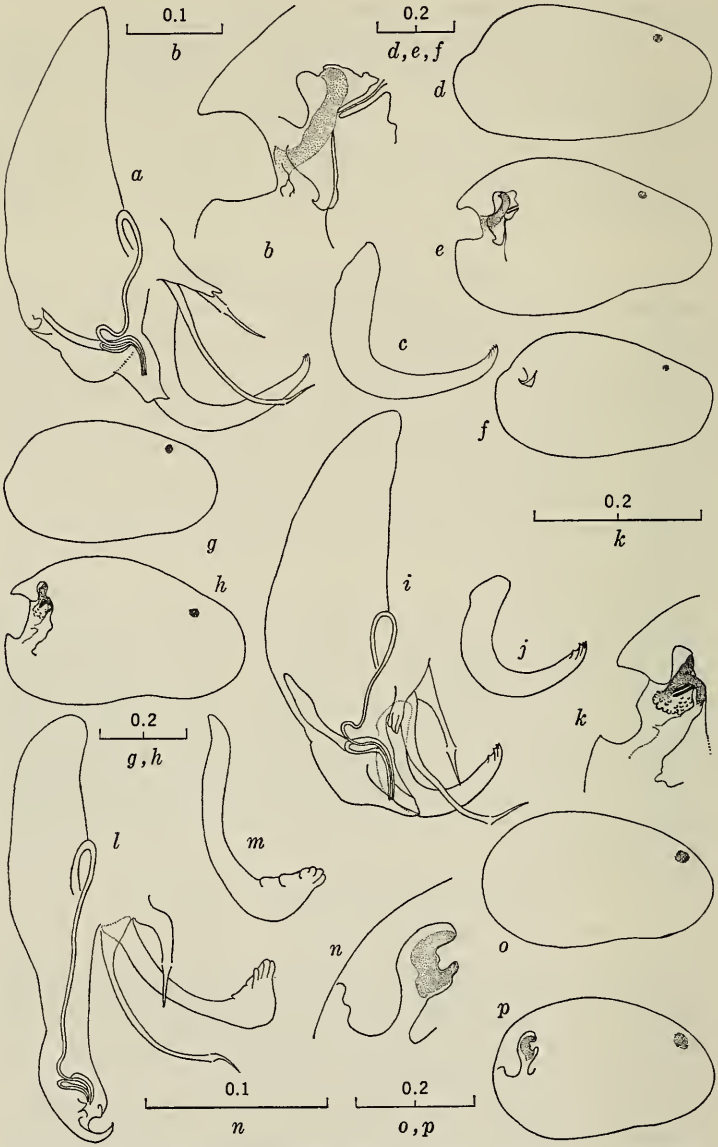

FIG. 2*a–f*, *Dactylocythere crena*, new species; 2*g–k*, *Dactylocythere scissura*, new species; 2*l–p*, *Psittocythere psitta*, new species. *a*, *i*, *l*, copulatory complex of male; *b*, *k*, *n*, genital apparatus of female; *c*, *j*, *m*, clasping apparatus of male; *d*, *g*, *o*, dextral view of shell of male; *e*, *h*, *p*, dextral view of shell of triunguis female; *f*, dextral view of shell of biunguis female. Scales in mm.

longer than proximal arm; distal arm proportionately longer than that of any other of its congeners and sometimes reaching almost to distal extremity of peniferal groove. Accessory groove slender, extending posterodorsally from base of penis, never reaching dorsally beyond level of midlength of spermatic loop. Clasping apparatus (Fig. 2*j*) C-shaped without hint of angle at junction of horizontal and vertical rami; rami subequal in length; vertical ramus entire, and horizontal ramus with 3 apical denticles and 1 small tooth immediately proximal to latter. Dorsal and ventral fingers moderately slender, former slightly greater than half length of latter; ventral finger weakly sinuous and directed antero-ventrally.

Triunguis Female: Eye pigmented, situated approximately one-fourth shell length from anterior margin. Shell (Fig. 2*h*) very high posteriorly and tapering anteriorly, greatest height about 1.4 times that at level of eye. Posterior margin of shell with broad subrectangular notch (suggesting the name *scissura*, L. = cleft), height of which about one-third greatest height of shell. Genital complex (Fig. 2*k*) consisting of highly refractive J-shaped rod with tapering, dorsally disposed extension from body of rod; heterogeneous frothy-appearing mass suspended from ventral extremity of refractive body opposite cleft in posterior margin of shell, this body perhaps corresponding, at least in position, to amiculum of most members of genus.

Measurements (*in mm*): 10 males and 10 females.

	Holotype	Males	Allotype	Females
Length (range)	0.50	0.48–0.53	0.53	0.49–0.55
Average		0.50		0.52
Height (range)	0.28	0.27–0.29	0.31	0.29–0.35
Average		0.28		0.32

Type-locality: Field at Ten Mile Creek (Tennessee River Basin) at U.S. Highway 11, Knox County, Tennessee, where it was infesting an undescribed burrowing crayfish, *Cambarus* (*Depressicambarus*) sp.

Disposition of Types: The holotypic male and allotypic female are deposited in the National Museum of Natural History (Smithsonian Institution), numbers 150648 and 150649, respectively. Paratypes are in the collection of H. H. Hobbs III and the Smithsonian Institution.

Range and Specimens Examined: Approximately 30 specimens from the following localities in the Tennessee River Basin, Knox County, Tennessee: Field at County Road 2404, Middlebrook Pike, opposite Wesley Road, Knoxville. Field at Interstate 75 N, near Emory Road eastern exit, Knoxville. Field at Hardin Valley Road, approximately 2 miles southwest of Lovell Road off Interstate 40, west of Ball Camp. Field southwest of Byrd Chapel, just west of Hickory Creek.

Hosts: *Cambarus* (*Depressicambarus*) sp. nov., *Cambarus* (*Cam-*

barus) *bartonii bartonii* (Fabricius, 1798), and *Cambarus* (*Jugicambarus*) *dubius* Faxon, 1884.

Entocytherid Associates: *Donnaldsoncythere hiwasseensis* (Hobbs and Walton, 1961), *Uncinocythere simondsi* (Hobbs and Walton, 1960), *Dactylocythere* sp., and *Entocythere* sp.

Relationships: *Dactylocythere scissura* is more closely related to *Dt. crena* than to any other ostracod. The unique characteristics of the two are pointed out in the discussion of relationships of the latter. *Dactylocythere scissura* may be distinguished from *Dt. crena* by its smaller size, the presence of a well defined peniferal groove instead of a tapering anteroventral sheath on the peniferum, and the former possesses a ventrally flattened peniferum as opposed to a ventrally rounded one in *Dt. crena*.

Psittocythere, new genus

Diagnosis: Terminal tooth of mandible pectinate. Male copulatory complex (Fig. 2*l*) without finger guard. Peniferum extending ventrally only slightly beyond clasping apparatus, elongate, slender, with subterminal enlargement bearing single acute hooklike projection from posteroventral extremity; hook curved anterodorsally; penis consisting of contiguous spermatic and prostatic elements directed anteroventrally, neither element more than one-fourth length of clasping apparatus; accessory groove lacking. Clasping apparatus (Fig. 2*m*) not reaching ventral margin of peniferum but well developed, clublike, and not clearly divisible into horizontal and vertical rami; postaxial border entire; preaxial border of swollen distal third with 6 rounded teeth. Triunguis female with second antenna lacking accessory pectinate process on distal podomere; genital complex (Fig. 2*n*) consisting of short bilobed prominence, suspended in posterodorsal part of body, surrounded by amorphous irregularly shaped refractive mass.

Type-species: *Psittocythere psitta*, described below.

Gender: Feminine.

Psittocythere psitta, new species
(Figure 2*l–p*)

Male: Eye pigmented and located about one-sixth shell length from anterior margin. Shell (Fig. 2*o*) subovate with greatest height distinctly posterior to midlength, about 1.5 times height at level of eye; ventral margin with faint concavity anterior to midlength. Submarginal setae present except dorsally and somewhat closer together anteriorly and posteriorly than ventrally.

Copulatory complex (Fig. 2*l*) as described in generic diagnosis. In addition, dorsal finger distinctly angular and slightly more than half length of slender, gently and evenly curved ventral process.

Triunguis Female: Eye as in male. Shell (Fig. 2*p*) more highly vaulted than in male, with greatest height distinctly posterior to mid-

length, about 1.7 times that of height at level of eye; ventral margin with concavity as in male. Submarginal setae present except dorsally between level of eye and genital complex, distinctly closer together anteriorly and posteriorly than ventrally.

Measurements (in mm): 7 males and 5 females.

	Holotype	Males	Allotype	Females
Length (range)	0.39	0.38–0.40	0.37	0.37–0.42
Average		0.39		0.40
Height (range)	0.23	0.20–0.23	0.24	0.22–0.25
Average		0.22		0.23

Type-locality: Laurel Creek, 9.7 miles northeast of Jamestown on State Route 154, Fentress County, Tennessee. There this ostracod was associated with *Dactylocythere spinata* Hobbs and Walton, 1970, and *Donnaldsoncythere hiwasseensis* (Hobbs and Walton, 1961). These ostracods were infesting *Cambarus* (*Jugicambarus*) *distans* Rhoades, 1944.

Disposition of Types: The holotypic male and allotypic female are deposited in the National Museum of Natural History (Smithsonian Institution), number 150650. Paratypes are in the collection of H. H. Hobbs III and the Smithsonian Institution.

Range and Specimens Examined: Known from the type-locality and the following two localities in Pickett County, Tennessee: Rock Creek at State Route 154, and Thompsons Creek at State Route 154. Only 12 specimens are available from the three localities, all of which are in the Big South Fork of the Cumberland River system.

Host: *Cambarus* (*Jugicambarus*) *distans* Rhoades, 1944.

Entocytherid Associates: *Dactylocythere spinata* Hobbs and Walton, 1970, *Donnaldsoncythere hiwasseensis* (Hobbs and Walton, 1961), *Dactylocythere* sp., and *Entocythere* sp.

Relationships: *Psittocythere psitta* is perhaps more closely allied to *Cymocythere clavata* Crawford, 1965, than to any other species, the greatest similarity occurring in the clasping apparatus. In this respect, however, it is markedly dissimilar to the other two species assigned to the latter genus. The arched hooklike projection anterodorsally from the posteroventral side of the subterminal bulbous area is unique in this ostracod, and it is this unique characteristic that lends a parrotlike aspect to the inverted peniferum that, in turn, suggested the generic and specific names proposed for this ostracod.

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